Two Mile Branch

City of Valdosta
Lowndes County, Georgia
TMDL Implementation Plan

Background
Two Mile Branch, located within the City of Valdosta (Lowndes County, Georgia), is a 3.27-mile stream segment (impacting approximately 2712 acres) that meanders through residential land. It is currently listed as an impaired stream segment by the Georgia Environmental Protection Division. Two Mile Branch has a water use classification of fishing and according to the Georgia 305(b) data that was used to place it on the Georgia 1996 303(d) list, Two Mile branch is "not supporting" this designated use classification.

Existing Land Use
Since Two Mile Branch is located within the corporate limits of the City of Valdosta, the impaired stream segment is surrounded almost entirely by residential land uses. Most of the land uses are served by city water and sewer services. However, since the area is historically residential, it is possible that some of the houses remain on septic systems.

Monitoring Data
In February of 1998, the Fecal Coliform TMDL Development Plan for Two Mile Branch was completed. That plan listed the stream segment as being impaired based on "limited fecal coliform data that was readily available and used to put the stream segment of the 303(d) list." The necessary load reductions were based primarily on modeling data from 1987 and 1988.

In October of 1999, the City of Valdosta, in conjunction with the USGS (United States Geological Survey)-Patuxent Wildlife Research Center and the Warnell School of Forest Resources at the University of Georgia in Athens, Georgia, conducted a bioassessment of the city's streams. This was done as part of a comprehensive watershed assessment required in the permitting of the local wastewater treatment facilities for the City of Valdosta. Using Rapid Bioassessment Protocols, (RBPs) this group conducted bioassessments on fifteen stream segments within the City of Valdosta and a reference site on the Little River. Two Mile Branch was one of the segments examined. According to their research and findings, Two Mile Branch was only slightly impaired with an overall rating of 68%[1].

Existing Regulatory or Voluntary Action
Currently, the City of Valdosta has several required and voluntary ordinances that are designed to regulate and limit stream pollutants. They are:

- *The Sanitary Code*-Regulates the installation of on-site septic systems.
- *The Sanitary Code*-Regulates the installation of sewer lines within the city.

[1] 50%-69% listed as being slightly impaired;
70% and above listed as nonimpaired.
Percentage is based on the RBP ratio between the sampled site and the reference site on the Little River.

- *Zoning Ordinance-Part V: Environmental Regulations*-mandated by the state of Georgia for Ground Water Recharge Areas, Protected River Corridors, and Wetlands, (in this case, only Wetlands will apply) is pending adoption.
- *Storm Water Management Plan*-Designed for the management of storm water run-off.
- *Erosion Control and Sedimentation Act*-Construction code to reduce pollutants to navigable waters.
- *Tree and Landscape Ordinance*-Voluntary actions for soil and sedimentation control.

Recommended Regulatory or Voluntary Action

It is recommended that the City of Valdosta conduct periodic monitoring of the impaired stream segments. This could be done on a monthly basis to determine when, if any, impairment is at its peak. The city could also conduct thirty day monitoring periods at least once a year. This would also be instrumental in determining if action plans should be more pro-active or re-active.

It should be noted that the Upper Suwannee River Watershed Initiative (USRW) is a citizen-led coalition partnered with public and private agencies to bring together residents of the USRW to identify and solve problems that affect their water, soils, and forest. The main goal of this group is to address potential problems early and help avoid costly and continuous battles over limited resources.

Schedule For Implementing Management Measures

The schedule for implementing such a monumental plan as this should be as follows:

Year One

- Stakeholders Group is formed identifying major constituents that would be impacted by the impaired stream segment.
- Organize implementation work with stakeholders and local officials to identify remedial measures and potential funding sources. *(this would continue for the entire five year period)*
- Identify sources of TMDL parameters
- Develop management programs to control runoff including identification and implementation of BMPs. *(this would continue into year two)*
- Organize and implement education and outreach programs. *(this would continue into year three)*

Year Two

- Monitor and evaluate results.

Year Three

- Evaluate additional management controls needed. *(this would continue into year five)*
- Provide periodic status reports on implementation of remedial activities.

Year Four

- Reassess TMDL allocations. *(this would continue into year five)*
- Monitor and evaluate results.

Year Five

- Provide periodic status reports on implementation of remedial activities.

There are three particular aspects of the plan that need to be addressed separately because of their importance. First, it is important to determine if fecal coliform levels still warrant listing the branch on the 303(d) list. This needs to be done as soon as possible. Second, if monitoring determines fecal coliform levels still exceed acceptable limits, the stream segment should be monitored in several different locations to identify a source of the contamination. Then, the necessary measures can be taken to decrease the fecal coliform levels and have the stream taken off the 303(d) list. Finally, after the sources of the fecal coliform contamination have been determined and measures have been taken to abate the impairment, periodic monitoring needs to be done to ensure the integrity of the segment has remained below the acceptable fecal coliform levels.

It should be noted, however, these measures will require proper funding and coordination from specialized groups to ensure the measures are implemented correctly.

Funding

It is recommended that if preliminary monitoring shows no significant reduction in levels of fecal coliform, funding should be sought for extensive long term monitoring to identify sources of the pollutants and also to determine proper action to reduce levels of fecal coliform. Funds could be used not only for water quality monitoring, but also for the "proper" checking of on-site sewage systems as well as city sewer lines. It could also be used to monitor ground water for potential contamination beyond the surface level of the streams. This would help ensure quality of water both above and below the surface.

Conclusion

It has been determined that more extensive monitoring and up-to-date data collection needs to be done before determining the specific cause and source of impairment of the stream segment. Once this has been completed, then the proper actions can be taken to ensure the highest quality of sustainability for our waters.

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN FOR: ____Two Mile Branch_____FC___ RIVER BASIN: ____Suwannee_____
(STREAM) (PARAMETER) PLAN DATE: _____

Prepared by: _South Georgia RDC_____ _____South Georgia_____ Regional Development Center Address: _327 W. Savannah Ave._____ City:_Valdosta_____ State: _Georgia____ Zip:_31601_____ E-mail:_____ Date Submitted to EPD: ____08/25/03 (Revision 01)____	Or Prepared By: _____ Address: _____ City:_____State: _____ Zip: _____ E-mail: _____ Date Submitted to EPD: _____

General Information

Obtain this information from the TMDL document or other information. When completed, this document will be a self-contained report independent of the TMDL document.

TMDL ID (to be entered by EPD)	
Water body name	Two Mile Branch
HUC basin name	Suwannee
HUC number	03110203
Primary county	Lowndes
Secondary county	N/A
Primary RDC	South Georgia
Secondary RDC	N/A
Water body location	Within Valdosta Corporate Limits
Miles or area impacted	3.27 miles / 2712 acres
Parameter addressed in plan	Fecal Coliform
Water use classification	Fishing
Degree of impairment	Partially supporting use ☐ Not supporting use **X**
Date TMDL approved by EPA	2/19/1998
Impairment due to	Point sources ☐ Nonpoint sources **X** Both ☐
Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C	

Significant Stakeholders

Identify local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups with a major interest in this water body.

Name/Organization	Mayor James Rainwater, City of Valdosta				
Address	P.O. Box 1125				
City	Valdosta	State	GA	Zip	31603
Phone	(229) 259-3502			E-mail	
Name/Organization	Lowndes County Health Department				
Address	206 S. Patterson St.				
City	Valdosta	State	GA	Zip	31601
Phone	(229) 333-5255			E-mail	
Name/Organization	Valdosta State University				
Address	1500 N. Patterson St.				
City	Valdosta	State	GA	Zip	31601
Phone	(229) 333-5980 (University Relations)			E-mail	
Name/Organization	George Eager (Eager Engineering Inc.)				
Address	404 Eager Road				
City	Valdosta	State	GA	Zip	31602
Phone	(229) 242-6684			E-mail	
Name/Organization	Joe Ree Fishing Club				
Address	1203 Hickory Drive				
City	Valdosta	State	GA	Zip	31602
Phone				E-mail	

If more, add to comments on last page.

SUMMARY OF ALLOCATION MODEL RESULTS FROM TMDL DOCUMENT (existing load, target TMDL, and needed reduction)

EXISTING LOAD	**TARGET TMDL**	**NEEDED REDUCTION**
738 CFU/100ml	150 CFU/100ml	588CFU/100ml

I. IDENTIFY **POTENTIAL NON-POINT SOURCE** CATEGORIES AND SUBCATEGORIES OR INDIVIDUAL SOURCES WHICH MUST BE CONTROLLED TO IMPLEMENT LOAD ALLOCATIONS:

List major non-point sources **potentially** contributing to impairment including those identified in TMDL document.

POTENTIAL SOURCE	**DESCRIPTION OF POTENTIAL CONTRIBUTION TO IMPAIRMENT**	**RECOMMENDED LOAD REDUCTION (FROM TMDL)**
Urban Run-off	Domestic Animals and Small Wildlife	85%
Leaking Septic Tanks	Leaking Septic Systems	85%
Broken Sewer Lines	Cracked or Broken Sewer Lines	85%

II. DESCRIBE ANY REGULATORY OR VOLUNTARY ACTIONS INCLUDING MANAGEMENT MEASURES OR OTHER CONTROLS BY GOVERNMENTS OR INDIVIDUALS THAT SPECIFICALLY APPLY TO THE POLLUTANT AND THE WATERBODY FOR WHICH THE TMDL WAS WRITTEN, THAT WILL BE ACCOMPLISHED THROUGH RELIABLE AND EFFECTIVE DELIVERY MECHANISMS, AND THAT WILL HELP ACHIEVE THE LOAD ALLOCATIONS IN THE TMDL:

See the attachment for more instructions.

EXISTING OR REQUIRED REGULATORY ACTIONS

RESPONSIBLE GOVERNMENT, ORGANIZATION OR ENTITY	**NAME OF REGULATION /ORDINANCE**	**DESCRIPTION**	**ENACTED OR PROJECTED DATE (mm/yy)**	**STATUS**
Lowndes County Health Dept.	Sanitary Code	Installation of on-site sewage systems	1970's	In-force
City of Valdosta	Sanitary Code	Installation of sewer lines	1970's	In-force
City of Valdosta	Zoning Ordinance	Part V: Environmental Regulations	N/A	Pending Adoption
City of Valdosta	Storm Water Management Plan	Management of storm water run-off	1997	In-force
City of Valdosta	State of Georgia Soil & Sedimentation Control Act	Construction code to reduce pollutants in navigable waters	1980's	In-force
City of Valdosta	Bio-assessment including Fecal Coliform	Sampling done to receive permits to increase capacity of waste water treatment facility	October 1999	In Process
City of Valdosta	Water Resource Districts	To establish minimum development standards and criteria, which will afford reasonable protection of environmentally sensitive natural resources, found throughout the City of Valdosta, such as Groundwater Recharge Areas, Wetlands and River Corridors	2003	Adopted
City of Valdosta	Floodplain Management Ordinance	100 year / 500 year flood levels are shown on FEMA flood maps	Adopted	In-forced
City of Valdosta	Local Soil & Sedimentation Ordinance	Regulation of BMP's for development Erosion and Sedimentation Control Act (GESA). Requires permits for "land disturbing activities" and requires buffers to be maintained	Adopted	In-force

		between the land disturbing activity and waters of the state.		
City of Valdosta, University of Georgia Department of Biological and Agricultural Engineering's Watershed Group, and Carter & Sloope, Inc.	Comprehensive Watershed Assessment	A comprehensive watershed assessment was conducted in order for the City of Valdosta to apply for a NPDES permit for a new wastewater treatment plant facility and to renew the existing NPDES permit on Mud Creek.	1999	EPD is currently reviewing

EXISTING VOLUNTARY ACTIONS

RESPONSIBLE ORGANIZATION OR ENTITY	**NAME OF ACTION**	**DESCRIPTION**	**ENACTED OR PROJECTED DATE (mm/yy)**	**STATUS**
City of Valdosta	Tree and Landscape Ordinance	Soil and Sedimentation Control as well as Increased Buffers and Distances	Summer 2000	In-force
City of Valdosta, Utilities Department and SGRDC	Storm Drain Awareness curb marker program	The city is placing curb markers throughout the city to help bring awareness to non-point source pollution.	July 2003	Current

Note: *All organizations listed in the tables are considered stakeholders.*

Additional recommended regulatory or other measures, which should be implemented to reduce the loads of the TMDL parameter

ENTITY/ORGANIZATION RESPONSIBLE	**NAME OF PROPOSED REGULATION/ORDINANCE/ OTHER**	**DESCRIPTION**	**ENACTED OR PROJECTED DATE (mm/yy)**	**STATUS**
City of Valdosta	Periodic Monitoring	Regular sampling of impaired stream segments	2002	Pending Funding
Upper Suwannee River Basin Management Plan	Water Management Plan	Implement regulatory/voluntary activities to meet water quality goals	2004	Ongoing

III. SCHEDULE FOR IMPLEMENTING MANAGEMENT MEASURES OR OTHER CONTROL ACTIONS:

These must be implemented as expeditiously as practicable within five years of when the implementation plan is accepted by EPA.

IMPLEMENTATION ACTION	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Form stakeholders group	X				
Organize implementation work with stakeholders and local officials to identify remedial measures and potential funding sources	X	X	X	X	X
Identify sources of TMDL parameter	X				
Develop management programs to control runoff including identification and implementation of BMPs (Phase I): Agriculture					
Forestry					
Urban	X	X			
Mining					
Organize and implement education and outreach programs	X	X	X		
Detect and eliminate illicit discharges					
Evaluate additional management controls needed			X	X	X
Monitor and evaluate results		X		X	
Reassess TMDL allocations				X	X
Provide periodic status reports on implementation of remedial activities			X		X
If needed, begin process for Phase II (next 5 years) and subsequent phases					

IV. PROJECTED ATTAINMENT DATE AND BASIS FOR THAT PROJECTION:

The projected attainment date is 10 years from acceptance of the implementation plan by EPA.

V. MEASURABLE MILESTONES:

- Number of management controls and activities already implemented ____5_____

- Number of management controls and activities proposed in five-year work program ____3_____

- Number of management controls and activities actually implemented in five-year work period _____(to be completed after 5 years)

- Stream sampled to identify areas of concern See monitoring plan

- Other _____ _____

VI. MONITORING PLAN:

Monitoring data that placed stream on 303(d) list will be provided if requested.

Describe previous or current sampling activities or other surveys to detect sources or to measure effectiveness of management measures or other controls.

ORGANIZATION	TIME FRAME	PARAMETERS	PURPOSE	STATUS
???-Funding must be identified	As soon as possible	Fecal Coliform	Determine if fecal coliform levels still warrant listing the branch on the 303(d) list	Funding for monitoring must be identified
???-Funding must be identified	If additional monitoring determines F.C. levels exceed limits	Fecal Coliform	Monitor branch at several different points to identify source of contamination. Implement necessary measures to decrease F.C. load	Needs to be done if stream is not de-listed; Funding must be identified.
???-Funding must be identified	After sources are determined and measures to abate are implemented	Fecal Coliform	Periodic monitoring to determine if implemented measures are successful	Needs to be done if stream is not de-listed; Funding must be identified.
The University of Georgia - Department of Biological and Agricultural Engineering	January 2000	DO concentration, electrical conductivity (EC), temperature, pH, depth, fecal coliform (FC), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), turbidity, total phosphorus (TP) ammonia (NH3) total Kjeldahl nitrogen (TKN), nitrate-nitrite, lead, copper, cadmium, zinc and hardness	Mandated by rules issued by the GA DNR EPD associated with permits for the discharge of municipal wastewater.	Completed
City of Valdosta's Utility Department	Sampling sites are on a rotation cycle between watersheds (Two-Mile Branch is proposed to start sampling in September)	DO concentration, specific conductivity, temperature, pH, level, fecal coliform (FC), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), phosphorus, ammonia (NH3), and nitrates	Recommended by Management Plan	Ongoing

Describe any planned or proposed sampling activities or other surveys. (Scheduled EPD sampling can be found in the Basin Planning document.)

ORGANIZATION	TIME FRAME	PARAMETERS	PURPOSE	STATUS
EPD	2003-2004	Fecal Coliform	Basin planning	N/A
City of Valdosta	2002	Fecal Coliform	Test for impairment	N/A

VII. CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE:

- % concentration or load change (monitoring program)

- Categorical change in classification of the stream (delisting the stream is the goal)

- Regulatory controls or activities installed (ordinances, laws)

- Best management practices installed (agricultural, forestry, urban)

COMMENTS
Additional Stakeholders: ST. John Catholic Church, 800 Gornto Road, Valdosta, GA 31602, and (229) 244-2430.